

ABSTRACT OF THE DISCLOSURE

The present invention relates to the identification in vertebrate animals, including
5 humans, of an ion channel which is involved in osmoregulation and
mechanoreception. This ion channel, named VR-OAC, functions as a cation
channel which is activated by osmotic and mechanical stimulation. In particular,
the present invention relates to the broad applications of VR-OAC that capitalize on
its newly discovered properties and activities, including both diagnostic and
10 therapeutic methodologies. The invention further relates to methods for using the
receptor therapeutically, such as polypeptide or gene therapy, diagnostically. and to
methods and assays for identification and screening of VR-OAC analogs, agonists
or antagonists and uses thereof.

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